

REMARKS

Claims 16 and 18-30 are pending in this application. By this Amendment, claims 16 and 30 are amended and claim 17 is canceled. Support for the amendments to the claims may be found, for example, in the original claims and throughout the specification. No new matter is added.

Entry of the amendments is proper under 37 CFR §1.116 because the amendments: (a) place the application in condition for allowance (for the reasons discussed herein); (b) do not raise any new issue requiring further search and/or consideration (as the amendments amplify issues previously discussed throughout prosecution); (c) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (d) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

I. Rejection Under 35 U.S.C. §112, First Paragraph

The Office Action rejects claims 16-30 under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. By this Amendment, claim 17 is canceled rendering its rejection moot. As to the remaining claims, Applicants respectfully traverse the rejection.

The Office Action asserts that the newly added recitations of the claims are unsupported, and that the claims broadly read on a variety of shaped structures that are not taught by the originally filed specification. See Office Action, page 8.

By this Amendment, claim 16 is amended to delete "a lower portion formed from a distance between a lower end of the smoothing means and a position being nearly the same as

the position of the lower end of the opening that corresponds to a lower side of the outer peripheral surface of the pillar structure." Therefore, the rejection is overcome. Withdrawal of the rejection is respectfully requested.

II. Rejection under 35 U.S.C. §112, Second Paragraph

The Office Action rejects claims 16-30 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. By this Amendment, claim 17 is canceled rendering its rejection moot. As to the remaining claims, Applicants respectfully traverse the rejection.

The Office Action asserts that "claim 1" is unclear as to the (1) relationship between the lower portion relates to the outer peripheral surface and to and lower sides of the outer peripheral surface of the pillar structure.¹ See Office Action, page 8. Additionally, the Office Action asserts that "claim 1" recites that the coating is smoothed "between the upper and lower side of the outer peripheral surface," yet it also claims a uniform coating on the whole outer peripheral surface. The Office Action asserts that this appears contradictory.

By this Amendment, "a lower portion" has been deleted. Therefore, the rejection on this ground is overcome. Withdrawal of the rejection on this ground is respectfully requested.

Regarding the relationship between the lower portion upper and lower ends of the pillar structure and the upper and lower sides of the outer peripheral surface, with reference to Figure 1, the upper end 1c of the pillar structure 1 placed on the pedestal 3 is allowed to contact the cam 2 by elevating the pedestal 3, and thus the pillar structure 1 is interposed between the cam 2 and the pedestal 3 (the cam 2 is positioned on the upper end side of the pillar structure 1). The supplying and coating means has a nozzle having an opening in the form of a slit and the opening is disposed in nearly vertical direction with the position of the upper end of the opening being nearly the same as the position of the upper end of the pillar

¹ The references to claim 1 presumably were intended to be to claim 16. Accordingly, applicants have based their response on this assumption.

structure and has a length in longer direction which is shorter than the length between the both ends of the pillar structure, and the coating material is supplied from the opening of the nozzle to the upper side of the outer peripheral surface of the pillar structure and coated thereon. See specification, pages 9 and 24.

Therefore, Applicants respectively submit that there is not a contradiction and the terms would be clear to one of ordinary skill in the art. Accordingly, withdrawal of the rejection on this ground is respectfully requested.

The Office Action further alleges that there is no proper antecedent basis for the term "the upper side" of the outer peripheral surface at lines 27-28 of "claim 1." See Office Action, page 8.

By this Amendment, "the upper side" of the outer peripheral surface at lines 26-27 of claim 16 is amended to recite "an upper side." Therefore, the rejection on this ground is overcome. Withdrawal of the rejection on this ground is respectfully requested.

III. Rejections under 35 U.S.C. §103(a)

The Office Action rejects claims 16-30 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,749,970 to Fukuta et al. (hereinafter "Fukuta").² By this Amendment, claim 17 is canceled rendering its rejection moot. As to the remaining claims, Applicants respectfully traverse the rejection.

By this Amendment, claims 16 and 30 are amended to further define the relationship between the length of the opening and the sizes of the pillar structure being operated upon relative to the sizes of the opening to further distinguish over the structure of Fukuta. Specifically, claims 16 and 30 are amended to recite, "wherein the length of the opening of

² The rejection does not identify the specific Fukuta reference; however, U.S. Patent No. 5,749,970 to Fukuta et al. listed on Applicants' IDS submitted November 27, 2007, appears to be consistent with the assertions set forth the Office Action. Accordingly, Applicants' response is based on this reference.

the nozzle in longer direction is 30-80% of the length between the both ends of the pillar structure."

The Office Action, at pages 3 and 4, acknowledges that Fukuta does not teach a nozzle having a length in a longer direction that is shorter than the length between the both ends of the pillar structure, as recited in claim 16. To cure this deficiency, the Office Action asserts that Fukuta teaches a variable nozzle assembly to correspond to different lengths of the honeycomb structure to be coated and because this variety would offer greater control over the coating process.

Fukuta teaches an apparatus for coating an outer periphery of a columnar structural body comprising a holder, a coater, a feeder, a driving unit and a doctor blade for uniformly spreading the coating material around the outer periphery of the structural body (Abstract). Fukuta teaches that the holder consists of upper and lower pallets for the upper and lower sides of the structural body, in which the doctor blade can follow the surfaces of the upper and lower pallets. See Fukuta, col. 4, lines 5-12. Further, with reference to at least Fig. 6c, Fukuta teaches a coater 29 that is shorter in length than the doctor blade 30. Based on this teaching, the Office Action reasons that the apparatus disclosed by Fukuta can hold a pillar structure having a range of different lengths; including one where the recited length of the nozzle relative to the pillar structure is 30-80% by moving either upper or lower pallet.

Applicants respectfully disagree.

"[A] patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. This is part of the 'subject matter as a whole' which should always be considered in determining the obviousness of an invention under 35 U.S.C. § 103." *In re Spinnoble*, 405 F.2d 578, 585, 160 USPQ 237, 243 (CCPA 1969); see also MPEP §2141.02(III).

With reference to Fig. 2 of Applicants' specification, the present subject matter is directed, among other objects, to overcoming the disadvantages in the art as disclosed in JP-A-08-323727, and similarly Fukuta, in that the nozzle is usually disposed along the whole outer peripheral surface between both ends of the upper side and the lower side of the structural body such that the coating material is scraped by the smoothing plate flows down the lower side of the peripheral surface and collects in the form of a deposit resulting in a thick coating which cracks during the firing processes. See specification, pages 1-3. Fukuta clearly does not teach what lengths of nozzles, relative to the pillar structure, will lead to a coating that does not crack during the firing process, nor does it contemplate such advantages of controlling the length of the nozzles.

Furthermore, Fukuta fails to teach the criticality of the length of an opening of a nozzle, relative to the pillar structure, in longer direction of the pillar structure, as is demonstrated in Table 1 of the present specification. See Specification, pages 30 and 31, Table 1, reproduced below for convenience.

The length of product, the length of nozzle, the ratio of length of nozzle to length of product (length of nozzle/length of product), and the results of evaluation are shown in Table 1.

Table 1

	Length of product	Length of nozzle	Length of nozzle/Length of product (%)	Results of evaluation
Example 1	250	220	88	△
Example 2	250	170	68	○
Example 3	250	120	48	○
Example 4	300	270	90	△
Example 5	300	220	73	○
Example 6	300	170	57	○
Example 7	300	120	40	○
Comparative Example 1	300	320	107	×

Length of product: Height of honeycomb structure in the direction of central axis (unit: mm)

Length of nozzle: Length of nozzle in longer direction (unit: mm)

Length of nozzle/length of product: The ratio of length of nozzle to length of product (length of nozzle/length of product × 100)

It can be seen from Table 1 that pillar structures in which the ratio of the length of nozzle in longer direction to the distance between both end faces of the pillar structure was smaller showed less uneven coating or cracking at drying.

...when there were no uneven coating or there occurred no cracking at drying, this is indicated by “○”; when the proportion of uneven coating or cracking at drying was 0-50%, this is indicated by “△”; and when the proportion of uneven coating or cracking at drying was more than 50%, this is indicated by “×”.

Therefore, patentability is supported by the fact that Fukuta fails to recognize the criticality of the length of nozzle relative to the pillar structure.

As a result, for at least the reasons discussed above, Fukuta would not have rendered obvious each and every feature of claims 16 and 30.

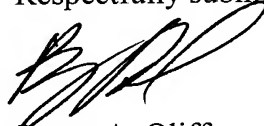
Claim 16 would not have been rendered obvious by Fukuta. Claims 18-29 variously depend from claim 16 and, thus, also would not have been rendered obvious by Fukuta. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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